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THE WOLF BOY

Reactive Attachment Disorder in an Adolescent Boy

ABSTRACT

An adolescent boy presented with episodic wolf-like aggressive behaviors, for which his rural community planned an exorcism. Admission to a tertiary care hospital revealed an adolescent suffering an array of severe psychiatric symptoms, which best fit the diagnosis of reactive attachment disorder (RAD). The differential diagnosis included delusional disorder, mood problems, anxiety, schizophrenia, and "feral child" syndrome. Nosology and pathophysiology as well as pharmacological and psychosocial treatments are discussed. We highlight the importance of early life events in determining mental health risk and resiliency.

INTRODUCTION

Children and adolescents with significant mood problems, aberrant behavior, and cognitive deficits, which seem to be associated with disruptions in their early caregiver relations, have long been populations of concern to clinicians. Significant early life relationship disruptions may contribute to such conditions through absence or inconsistency

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of caregivers (such as in institutional settings), toxic relationships, or traumatic losses of attachment. Indeed, such concerns prompted Bowlby and others to formulate the attachment theory and led to the current formulation of reactive attachment disorder (RAD) in DSM-IV.[1] This current diagnostic category, which includes an onset before age 5, is divided into inhibited and disinhibited subtypes.[2] The inhibited subtype is characterized by hypervigilance and anxiety that is expressed as social withdrawal and ambivalence; while the disinhibited subtype involves indiscriminant and often inappropriate social behavior, commonly experienced as inappropriate friendliness.

Thus, in addition to the child's primary attachment relationship, RAD applies to disturbances in social relatedness across a variety of individuals and contexts. As the name suggests, RAD implies a response to early and profoundly pathological caregiving, which has been formalized in DSM-IV as "persistent disregard of the child's basic emotional needs for comfort, stimulation, and affection; persistent disregard for the child's basic physical needs; or repeated changes of primary caregiver that prevent formation of stable attachment."

According to DSM-IV, the disorder is "very uncommon," though the empirical source for this assertion is not clear. Institutional neglect of children initiated the concept of RAD. Children who have been chronically maltreated—especially during early years of life—are at higher risk of developing RAD, suggesting a causal role of maltreatment in the pathophysiology of RAD. However, the lack of a widely accepted diagnostic tool has confounded accurate diagnosis and reliable epidemiology. The onset of marked social development defects must precede the age of 5. Acquiring an accurate history of this, however, may be practically difficult. In addition, several other diagnoses are confused or comorbid with RAD, such as anxiety and conduct disorders.[3,4] It is interesting to note that RAD is one of the few disorders in which the etiology is essentially part of the diagnosis.

The two major pathways to treatment of RAD are pediatric assessment for failure to thrive during infancy and psychiatric evaluation for behavioral and language delays in early childhood. Almost by definition, the fact that poor caregiving is part of the problem may further delay and hinder presentation to mental health professionals for many years. In addition, the detailed quality of early life, social behaviors, and language development may be difficult to elicit.

The disorder must not be understood solely as the result of developmental delay or mental retardation, and must not meet criteria for pervasive developmental delay (PDD). In fact, reports on children with RAD[5] suggest that intellectual functioning may be below average or delayed on initial testing but improve markedly with therapeutic intervention—unlike children with mental retardation (MR). In fact, this diagnosis highlights the current controversy in child psychiatry in understanding the complex cognitive and behavioral abnormalities that occur in very young children—likely the result of complex gene-environment interactions—and may seem like autism, yet vary widely in their developmental trajectories.

By current definition, RAD arises with pathological caregiving. Research in nonorganic failure-to-thrive infants has described mothers of affected infants to have less social adaptive social interactions, less positive affect, and more arbitrary termination of feeding. These mothers also frequently complain of lack of perceived emotional support from family members. After the work of Rutter and colleagues with Romanian adoptees,[6] it appears that early biological programming or neural damage stemming from adversity or institutional deprivation may have long-term effects with autistic-like presentation emerging. However, as with autism and other childhood neurodevelopmental disorders, the jury is still out as to how much can be corrected by improving the environment and providing treatment.

Indeed, RAD presents several unique therapeutic challenges. Affected children may be unable to form supportive relationships with clinicians and may experience ongoing counterproductive environments at home. Several unorthodox treatment approaches, including holding therapy, have been scientifically evaluated. A less controversial approach may entail the support and education of a consistent caregiver, corrective social experiences, social skills training, and the judicious use of psychopharmacological agents to target severe debilitating symptoms. Perhaps future research will examine the biological bases of RAD to provide more accurate prognoses based on the biological malfunctions and help specify the most appropriate treatments according to the biology and developmental stage.

CASE REVIEW

Identification. KO is a 15-year-old Caucasian boy who lives with his mother and 16-year old brother in a remote, rural town many hours drive from a major city. He has not attended school regularly since grade 4 and had a history of irregular school attendance prior to grade 4

amounting to no more than a few weeks at a time of regular school attendance. He maintains a distant relationship with his father, characterized by occasional visits to which he does look forward. His dad makes the several-hour drive to visit and spend some time with him about once a month for part of a day. KO has little interaction with his brother, who is embarrassed by KO's behavior.

Reason for referral to "on call psychiatry." KO exhibited repeated episodes of grossly inappropriate, animal-like behavior, lasting from moments to about an hour, and occurring several times per day over several months. During these episodes, KO was observed to be crawling around on his hands, grunting, growling, and acting like a gorilla or dog. Other behaviors included running up and down hallways, swinging his knuckles on the floor, hitting doorways, and digging around the ground. During these episodes, he would sometimes "nibble" (bite softly) on his mother's legs. After such episodes, he would sometimes shake briefly and then suddenly exclaim statements, such as "Which animal was I this time?" or "What happened?"

KO's mother found these escalating behaviors overwhelming. As they began to occur on a daily basis, she did not know how to manage and brought KO to the emergency room. The patient was admitted to an adolescent inpatient psychiatric facility for diagnostic clarification and treatment recommendations.

History of presenting problem. At the time of admission at the age of 15, KO lived in the basement of his home from which he rarely ventured. He had not been to school for about six years, had no friends, and spent most of his days watching television, reading comic books, and playing video games. Sometimes he would paradoxically assume a supportive role for his mother who needed KO to wake her up and do chores around the house, such as cooking and cleaning.

One month before his 15th birthday, KO had the traumatic experience of falling into the rapids while spending the day with his father. He was pulled out safely, though shocked and "shaken up." Within a couple of weeks, KO's parents began to notice episodic animal-like behavior, which included biting, barking, dropping to all four limbs, hitting people, growling, and snarling aggressively. Much of his aggression was directed at his mother and sometimes required 3 to 4 people to restrain him. KO's mother was often frightened by this behavior, and KO sometimes bit his mother, though she did not require medical attention for these bites. There have been no observed seizures, incontinence, tongue biting, or any serious injury to himself or others.

In taking a history from the patient, which differed from his mother's, KO reports that these episodes, often preceded by a headache, began about two years prior to the current presentation (age 13). Initially, he reported no recollection of these "blackouts," noting that he would sometimes awake in a new location with torn clothes and scratches on his arms. He elaborated that he had come to believe that he might be a werewolf. Over many days during his inpatient stay, as a consistent relationship developed with inpatient staff, he began to reveal that he did remember parts of these experiences when he felt his senses and strength were heightened and that he was "more powerful." He also claimed to have cravings for raw meat over about one month as well as strange dreams that he was

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KO'S TIMELINE EVENTS

AGE 0 TO 3

- KO is born after a normal pregnancy and achieves early developmental milestones normally
- Chaotic home life culminating in the father leaving
- Severe and chronic neglect and emotional abuse

AGE 3 TO 9

- Generally introverted at school with occasional behavioral outbursts with frequent school refusal for weeks to months at a time
- Diagnosed with ADHD at age 9 and given methylphenidate

AGE 9

- Diagnosed with agoraphobia with no treatment
- Episodic severe anxiety
- Stopped going to school completely, educated exclusively by TV and books at home

AGE 13

- Began having headaches and blackouts

AGE 14 + 11 MONTHS

- Traumatic near drowning; mother noticed animal-like outbursts

AGE 15 + 4 MONTHS

- Mom finding animal outbursts overwhelming; community spiritual leader planning an exorcism; mom brings KO to the emergency room

AGE 15 + 7 MONTHS

- KO is discharged to stable home of father with referrals for psychiatric follow-up, family therapy, and placement at a vocational school

walking through the woods on all-fours with fur on his hands, encountering a man with a gun who turned out to be his local preacher.

On review of symptoms, KO did not endorse changes in his night sleeping pattern, energy, appetite, interests, or any periods of significantly elevated mood. He initially denied anxiety. However, after he was observed to experience episodes of apparently severe anxiety while an inpatient, he did confide that he has been experiencing sudden-onset anxiety for several years. He also showed no formal thought disorder or delusional homicidal or suicidal thought content. He did show some preoccupations with superheroes and monsters as a much younger child might. He also denied alcohol, cigarette, or illegal substance use.

Past psychiatric history. In early primary school (~age 7), KO exhibited some aggressive behaviors. At age 8, he was diagnosed with ADHD and received methylphenidate, which initially helped his academic performance at doses of 10mg/day. It was at approximately this time that he went to school increasingly infrequently.

At age 9, he was diagnosed with agoraphobia by a community psychiatrist in grade 4. He also recalled episodes of intense anxiety with heart racing, palpitations, shortness of breath, and paranoid ideation when he felt that people were watching and laughing at him. His mother reported that the psychiatrist recommended no treatment other than to stay at home. The records of that psychiatrist could not be obtained. There was some attempt at home schooling at age 11, which the mother/social services were not able to follow-up.

In the spring of 2001 (age 15), the family doctor diagnosed depression and started paroxetine at 10mg p.o. b.i.d. The parents noted improvement in mood and personal hygiene and felt that he was doing well until August, 2001.

Family history. KO's mother suffers from irritable bowel syndrome, fibromyalgia, depression, and bipolar disorder. There was also a history of major depression and agoraphobia in the maternal grandmother.

Personal and social history. KO's mother's pregnancy with him was unremarkable, culminating in an uncomplicated vaginal delivery. According to his mother, KO met developmental milestones over the first two years of life normally.

Apparently, during KO's first few years, his mother and biological father argued frequently. According to the father, KO's mother was emotionally unstable, and after years of unhappiness and regular arguments, he could not take anymore and left the home when KO was three years old.

KO showed significant behavioral problems and anxiety throughout his extremely limited school experience, during which time he was frequently absent. When he was at school, his teachers complained that he was generally introverted with behavioral outbursts. His mother permitted him to stay at home for weeks or months at a time and leave school whenever he was upset. He ceased going to school completely by grade 4 (age 9). He

apparently was going to be home-schooled, but social services, the school, and the mother failed to follow up on this plan, resulting in severe social isolation and lack of stimulation (no school attendance at all for about six years). It appears that his education was provided by television, computers, video games, and books at home.

Indeed, there were considerable problems with the variable availability and competence of KO's primary caregivers from his infancy. As mentioned previously, KO's father had left the home when KO was three. KO's mother described herself as "a terrible mother," who has been fighting depression and involved in difficult relationships her entire life. She conceded that she had been unable to get KO to go to school, and that she had in fact come to depend on KO to cheer her up and help around the house with chores.

What we inferred was that KO was the one who looked after his mother instead of the reverse. It seemed the mother would use manipulative ways (she gave KO "guilt trips" and claimed to have chronic fatigue syndrom) to keep KO from going out of the house and making friends. He often cooked for her and cleaned the house and was prevented from spending any time away from the home.

Examinations. A detailed physical/neurological examination, including neurology consultation, was normal. Bloodwork, including CBC with differential, electrolytes, random glucose, BUN, creatinine, blood gasses, AST, ALT, Alk Phos, GGT, TSH, urinalysis and drug screen, was normal. His EKG, head CT, and EEG were also normal.

Neuropsychological testing revealed a normal IQ, but the report confirmed primary school reading, writing, and mathematical skills—roughly corresponding to his last time in school. Despite this, he had attained extraordinary knowledge about certain topics that he had read about in a home encyclopedia, suggesting greater capacity.

Mental status examination. KO presented as a well-groomed, slim, tall, 15-year-old Caucasian boy who appeared his stated age. He had short, bushy, light-brown hair, made good eye contact, and was cooperative, though slightly downcast or nervous at times. He did not show any psychomotor abnormalities. His speech was of normal rate, rhythm, and tone with good articulation and sometimes impressive vocabulary in certain narrow subjects. His demeanor seemed oddly, overly familiar at times with strangers, and then quite uncertain or hesitant. This gave the impression of a much younger preadolescent child. His friendliness seemed to be contingent on impressing certain staff with which he was already familiar. His mood was "OK, happy." His affect was somewhat labile at times, and he was quick to interject a joke and laugh at it. At other times he showed some anxiety when discussing family issues. He was somewhat unexpectedly calm with respect to his animal-like behaviors. His thought form included some tangentiality and circumstantiality. His thought content was free of any suicidal, homicidal, or frankly delusional content,but was just somewhat vague. He often referred to fantasy figures from comic books or movies and wondered about becoming a super-hero himself one day. He also believed that he himself was a werewolf, and that would explain his "blackouts" and what people tell him of his animal-like behavior. He was not observed with his brother, who, according to his mother, was embarrassed to be associated with him. He was childlike with his parents.

Course in hospital. While in an adolescent inpatient psychiatric assessment unit for approximately one month, the patient did initially display a number of episodic animal-like behaviors. These were characterized by fits of growling, heavy breathing, and crawling around on the floor—lasting a few minutes up to about an hour. He was placed into a safe room and eventually emerged from these states apparently confused. Experienced childcare workers felt that he was able, at least partly, to control his animal-like episodes. He responded to basic behavioral interventions (such as rewarding appropriate behaviors and removal of privileges for "episodes") and gradually conceded that he did remember some of the episodes and felt that he was powerful and at least partly in control. A system of positive and negative reinforcement was devised and found to be almost completely effective in stopping these episodes.

Occasionally during assessment interviews, when addressing anxiety-provoking issues, KO appeared to adopt a vigilant and frozen affect, possibly in keeping with an episode of dissociation.

KO made a number of friends and displayed considerable childlike charm with other patients and adults. Sometimes, he was inappropriately familiar with strangers. He was also often quite "silly" and inappropriate with his humor, which he exercised with little concern for his audience's sensibilities. This behavior seemed to be more in keeping with a preadolescent. Sometimes his childish behavior invited derision, which he found very hurtful, and he reacted with a tantrum.

It was felt that KO required a longer period of inpatient behavioral guidance and assistance to re-initiate schooling, so he was transferred to an inpatient psychiatric unit at another hospital, which, it was felt, could offer further support and behavioral reinforcement.

Of note, just days after KO was admitted to the hospital, his

TABLE 1. Differential diagnosis (MAD)

I.	Reactive attachment disorder (largely disinhibited type); lycanthropy/psychosis NOS; elements of social anxiety/depression
	• schizophrenia, manic-depressive psychosis, hysterical neurosis, psychotic depression, organic brain syndrome (not yet picked up)
II.	Deferred. There was evidence for developmental delay, but not mental retardation. In some narrow subject areas, KO had considerable depth of knowledge.
III.	Nil, extensive work-up including bloodwork, EKG, EEG and CT head was unremarkable.
IV.	Severe long-standing neglect and inconsistent parenting; total school refusal (with parental permission) for six years, preceded by inconsistent school attendance; severe social isolation, including lack of close friends and gross mutual over-dependence on mother; excess TV/video games—most of time spent in the basement for many years
V.	Global Assessment of Function (GAF): 30 on initial presentation (grossly inappropriate, stays home, no friends); 60 on final discharge (moderate difficulty with school, conflicts)

mother was also admitted for a "nervous breakdown" at the same time, but we were not privy to the details.

The focus at the new hospital for KO was on structure, behavior modification, and improving his social, anger management, and anxiety reduction skills. He participated well in all solitary and group activities and handled himself well, gradually developing increased insight. He showed a tendency to over- or under-react to social situations leading to anxiety. Often, KO made shocking comments in order to get attention from peers. This behavior did show some improvement over the course of his hospital stay.

He continued to have animal-like episodes only very occasionally, but appeared to inpatient staff to be in control. He was given neuroleptic chlormromazine 50mg po od prn, which he took once every few days, which was reported to help him calm down and control the animal-like episodes.

KO attended inpatient school tutoring sessions. His attendance was regular, and he seemed to enjoy the work. His attention and concentration were thought to be normal, although he sometimes required redirection. At times, he needed help with "reality testing" related to his academic abilities as he was sometimes grandiose about his academic abilities, despite his actual abilities and output.

Psycho-educational testing revealed that KO was a learning disabled and educationally deprived adolescent who was at a basic literacy level with negligible spelling and very basic arithmetic abilities. For a 15-year-old, he had the unrealistic goals of being a superhero or policeman. However, among his strengths were above-average artistic capacities to draw and paint. Also, when in control he could make friends easily and appropriately.

KO's family continued to be a concern. His mother was not initially involved in assessment or treatment as she was almost simultaneously admitted for her own medical/psychiatric concerns. The boy's father was, however, available for weekend visits and seemed to provide consistent support. See Table 1 for differential diagnosis.

Recommendations. Following KO's hospitalization, it was unclear if the mother would be a supportive/positive figure for KO. Therefore, given the mother's fragile mental state, it was suggested the patient live with his father. In addition, it was felt that KO's relationship with his mother was enmeshed and that gradual separation/individuation from her would be required for normal adolescent development. This will likely require family therapy.

Medication. After a total of one month for inpatient hospital assessment and two months of a long-term hospital stay, KO was discharged to live with his father. He was to be maintained on paroxetine 20mg p.o. daily to treat his depressive and anxiety symptoms. Anxiety reduction techniques that were used during inpatient admission would require reinforcement to promote ongoing school attendance. A vocational school was suggested.

DISCUSSION

The child-caregiver relationship has long been considered crucial to psychological development, and issues of attachment within this relationship have acquired much interest in developmental research. Starting with Bowlby,[7] patterns of attachment have been increasingly better understood, but we are far from a complete description of the behavioral manifestations, diagnoses, and treatments for pathological attachments.

Bowlby, following the Freudian point of view, was one of the first researchers to stress the importance of early relationships on the social and emotional development of children. His theory conceptualized attachment as a biological drive for species survival, which would meet needs of survival as basic as protection from predators. Bowlby postulated four phases of attachment: signaling to

promote caregiver proximity, signaling toward a preferred caregiver, actively pursuing a preferred caregiver, and understanding the caregiver's independence. The development of normality in such attachment behaviors would naturally depend critically on the environment of the developing child; so if there is severe impairment in that early environment it would lead to generalized difficulties with normal attachment behaviors with other caregivers—and later teachers and friends.

Although animal-like behavior was the initial presentation of this patient, which is consistent with lycanthropy, there was no convincing evidence for the abnormal reality testing associated with the delusional aspects of that disorder as it is currently conceived.[8] Consideration of lycanthropy in this case is, however, interesting as a psychological projection of suppressed affects. In this case of RAD, perhaps the subject's inhibited behaviors occasionally surfaced as animalistic behaviors.

The treatment of RAD is controversial and raises many interesting issues. Since RAD likely has long-term consequences across many domains of social functioning, providing effective treatment is extremely important. However, affected individuals may be intrinsically resistant to conventional therapies, which are based on reciprocal trust, because of their difficulties with trusting others. In addition, they may not be motivated, have little regard for authority, and have poor impulse control. Key elements of treatment may include providing sources of emotional security, opportunities for corrective social experiences, and better social skills.[9] Inpatient treatments involving cognitive restructuring, re-parenting, psychodramas, and trauma resolution have been suggested,[10] but well-controlled trials have not been done.

One controversial therapy is holding therapy, or rage reduction therapy.[11] This therapy involves three primary components: prolonged restraint, prolonged noxious stimulation (such as poking or tickling), and interference in bodily functions. When the child finally breaks down and surrenders, he is then given to caregivers to whom he is reportedly instantly attached. Significant concerns about the potentially traumatic nature of this therapy have rendered it out of favor, although the controversy continues.[12] Clearly, further research is needed to clarify the various psychiatric presentations that may result from early attachment aberrations and to develop and test effective treatments.

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